IN THE CLAIMS

Please cancel claims 4-9 as follows:

- (PREVIOUSLY PRESENTED) A method of optimizing a query in a computer system, the query being performed by the computer system to retrieve data from a database stored on the computer system, the method comprising:
- (a) during compilation of the query, maintaining a GROUP BY clause with one or more GROUPING SETS, ROLLUP or CUBE operations in its original form, instead of rewriting the GROUP BY clause, until after query rewrite;
- (b) at a later stage of query compilation, translating the GROUP BY clause with the GROUPING SETS, ROLLUP or CUBE operations into a plurality of levels, wherein each of the levels has one or more grouping sets comprised of grouping columns, and generating a query execution plan for the query with a super group block having an array of pointers, wherein each pointer points to the grouping sets for a particular one of the levels; and
- (c) performing the query execution plan to retrieve data from a database stored on the computer system.
 - 2. (PREVIOUSLY PRESENTED) The method of claim 1, further comprising:
- (1) at query execution time, dynamically determining a grouping sets sequence for the GROUP BY clause with the GROUPING SETS, ROLLUP or CUBE operations based on intermediate grouping sets, in order to optimize the grouping sets sequence.
- 3. (PREVIOUSLY PRESENTED) The method of claim 2, wherein the dynamically determining step further comprises (1) performing a GROUP BY for a base grouping set and then optimizing execution of the grouping sets sequence by selecting a grouping set having lowest cardinality from a previous one of the levels as an input to a grouping set on a next one of the levels, and (2) performing a UNION ALL operation on the grouping sets.

4-9. (CANCELED)